

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/935,568

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 – 12. (canceled)

13. (new) A method for providing multicast services on a network comprising a multicast router, at least one subscriber access node, and a plurality of end user communications equipments, comprising the steps of:

providing a single, unidirectional multicast information flow between said multicast router and said subscriber access node over a point-to-multipoint connection;

providing a separate bidirectional flow of control data between each of said end user communications equipments and said multicast router via said subscriber access node over separate point-to-point connections;

replicating, in said subscriber access node, once for each of said end user equipments, multicast information data received over said single, unidirectional multicast information flow from said multicast router to form a separate unidirectional multicast information flow for each of said end user communications equipments; and

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transmitting the separate flows of multicast information data replicated in said subscriber access node over respective unidirectional point-to-multipoint connections between said subscriber access node and respective ones of said end user communications equipments.

14. (new) The method as claimed in claim 13, wherein each of said unidirectional point-to-multipoint connections is an ATM multipoint connection between said subscriber access node and said end user communications equipments.

15. (new) The method as claimed in claim 13, wherein each of said bidirectional point-to-point connections is an ATM point-to-point connection between said subscriber access node and said end user communications equipments.

16. (new) The method as claimed in claim 13, wherein said multicast router is an IP router.

17. (new) A method for providing multicast services on a network comprising a multicast packet router, a plurality of subscriber access nodes, and a plurality of end user communications equipments associated with each of said subscriber access nodes, comprising the steps of:

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providing a separate unidirectional multicast information flow between said multicast router and each of said subscriber access nodes over respective point-to-multipoint connections;

providing a separate bidirectional flow of control data between each of said end user communications equipments and said multicast router via the associated ones of said subscriber access nodes over separate point-to-point connections;

replicating, in each of said subscriber access nodes, once for each of the end user equipments associated with the subscriber access node, multicast information data received over the respective unidirectional multicast information flow from said multicast router to form a separate unidirectional multicast information flow for each of the associated end user communications equipments; and

transmitting the separate flows of multicast information data replicated in said subscriber access nodes over respective unidirectional point-to-multipoint connections between said subscriber access nodes and the associated ones of said end user communications equipments.

18. (new) The method as claimed in claim 17, wherein each of said unidirectional point-to-multipoint connections is an ATM multipoint connection between said subscriber access node and said end user equipments.

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19. (new) The method as claimed in claim 17, wherein each of said bidirectional point-to-point connections is an ATM point-to-point connection between said subscriber access node and said end user equipments.

20. (new) The method as claimed in claim 17, wherein said multicast packet router is an IP multicast packing routing device.

21. (new) A method for providing multicast services on a network comprising a multicast router, a subscriber access node, and a plurality of end user communications equipments, comprising the steps of:

providing a plurality of unidirectional multicast information flows between said multicast router and said subscriber access node over respective point-to-multipoint connections, wherein the number of said unidirectional multicast information flows is less than the number of said end user communications equipments;

providing a separate bidirectional flow of control data between each of said end user communications equipments and said multicast router via said subscriber access node over respective separate point-to-point connections;

replicating, in said subscriber access node, multicast information data received over said unidirectional multicast information flows from said multicast router to form separate unidirectional multicast information flows to said end user communications equipments; and

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transmitting the separate flows of multicast information data replicated in said subscriber access node over respective unidirectional point-to-multipoint connections between said subscriber access node and respective ones of said end user communications equipments, wherein each of said end user equipments selects which of the replicated flows of multicast information data to receive via the respective one of the bidirectional flows of control data.

22. (new) The method as claimed in claim 21, wherein each of said unidirectional point-to-multipoint connections is an ATM multipoint connection between said subscriber access node and said end user equipments.

23. (new) The method as claimed in claim 21, wherein each of said bidirectional point-to-point connections is an ATM point-to-point connection between said subscriber access node and said end user equipments.

24. (new) The method as claimed in claim 21, wherein said multicast router is an IP multicast packet routing device.

25. (new) A method for providing multicast services on a network comprising an ATM based subscriber access node comprising an IP multicast packet routing device, said subscriber

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access node being associated with a plurality of end user communications equipments, said method comprising the steps of:

providing a plurality of unidirectional multicast information flows from said multicast packet routing device over respective point-to-multipoint connections, wherein the number of said unidirectional multicast information flows is less than the number of said end user communications equipments;

providing a separate bidirectional flow of control data between each of said end user communications equipments and said multicast packet routing device; and

replicating multicast information data from each of said unidirectional multicast information flows from said multicast packet routing device to form separate unidirectional multicast information flows to said end user communications equipments,

wherein each of said end user equipments can select which of the replicated flows of multicast information data to receive via the respective one of the bidirectional flows of control data.

26. (new) The method as claimed in claim 25, wherein a plurality different ones of the replicated unidirectional multicast information data flows are provided simultaneously to at least some of said end user communications equipments.